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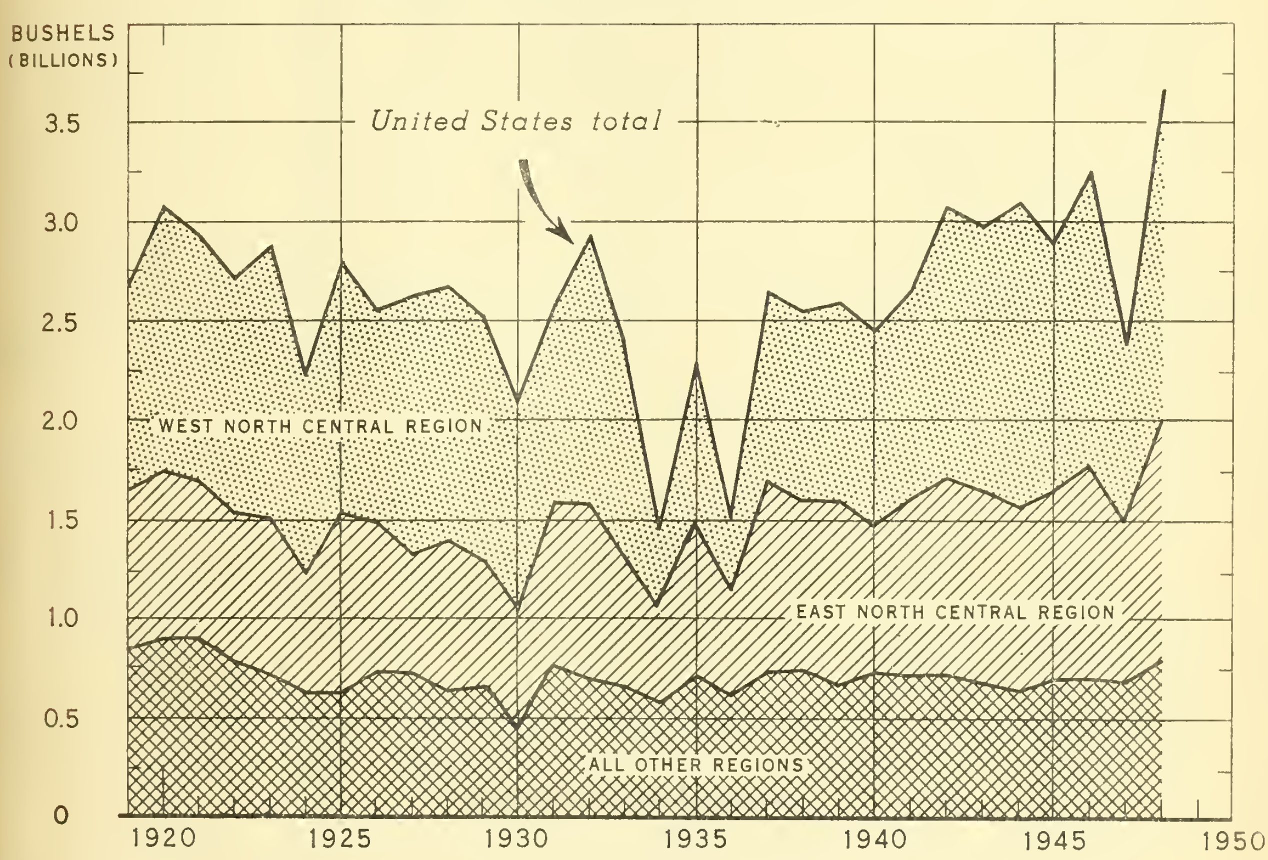
THE Feed SITUATION

BUREAU OF AGRICULTURAL ECONOMICS
UNITED STATES DEPARTMENT OF AGRICULTURE

FDS-105 BAE DECEMBER 1948

In this issue:
Regional Variations in
Corn Production

CORN: PRODUCTION IN THE UNITED STATES AND SELECTED REGIONS, 1919-48



U. S. DEPARTMENT OF AGRICULTURE NEG. 47012 BUREAU OF AGRICULTURAL ECONOMICS

The 1948 corn crop of 3,651 million bushels was 53 percent larger than the small 1947 crop, and more than double the small crops in the drought years 1934 and 1946. Corn production has changed on an average over 400 million bushels from one year to the next during the past 30 years. A large part of this wide variation has been due to sharp fluctuations in the Corn Belt, especially in the western half.

Table 1.- Statistical Summary

PRICES

Item	Unit	1946		1947		1948		
		Nov.	Dec.	Nov.	Dec.	Oct.	Nov.	Dec.
		Cents	Cents	Cents	Cents	Cents	Cents	Cents
Grains and Hay								
Corn, No. 3 Yellow, Chicago	Bushel	139.2	134.0	242.3	261.1	147.0	138.1	142.4
Price received by farmers, U. S.	"	127.0	122.0	219.0	237.0	138.0	121.0	123.0
Oats, No. 3 White, Chicago	"	85.4	82.5	124.1	127.3	77.8	87.8	86.6
No. 3 White, Minneapolis	"	81.4	80.8	117.6	124.9	73.7	81.7	80.1
Price received by farmers, U. S.	"	78.2	80.8	109.0	118.0	69.9	75.6	76.5
Barley, No.3, Minneapolis	"	161.6	168.9	242.6	251.0	141.9	144.7	134.6
Price received by farmers, U. S.	"	132.0	136.0	187.0	200.0	110.0	115.0	113.0
Grain sorghums, price received by farmers, U.S.	100 pounds	227.0	197.0	329.0	361.0	199.0	214.0	219.0
Wheat, No. 2 Hard Winter, Kansas City	Bushel	210.4	207.2	299.9	301.1	222.6	228.2	228.7
		Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
Hay, No. 1 Alfalfa, Kansas City	Ton	34.50	35.00	36.25	36.60	27.40	27.50	30.00
Price received by farmers, U. S.	"	17.20	17.70	17.30	18.10	18.40	18.40	19.10
Byproduct Feeds (bagged)								
Standard bran, Minneapolis	"	46.75	38.50	62.50	70.90	43.25	49.20	50.25
Buffalo	"	51.75	43.20	67.75	77.10	48.75	55.60	55.00
Price paid by farmers, U. S.	100 pounds	3.20	2.89	3.77	3.93	2.88	3.06	3.18
Standard middlings, Minneapolis	Ton	50.60	39.00	69.25	74.70	45.25	49.50	49.40
Buffalo	"	56.10	44.30	74.75	80.10	52.25	56.40	55.60
Price paid by farmers, U. S.	100 pounds	3.36	3.00	4.24	4.29	3.29	3.30	3.34
Cottonseed meal, 41 pct. protein, Memphis	Ton	92.40	80.30	90.80	97.15	64.75	74.20	71.10
Linseed meal, 32 pct. protein, Minneapolis	"	96.75	84.75	88.75	94.80	64.90	76.60	83.00
30 pct. protein, San Francisco	"	83.80	82.60	82.00	85.60	59.75	61.40	67.60
Soybean meal, 41 pct. protein, Chicago	"	93.35	80.70	92.90	101.50	66.80	79.25	78.00
Price paid by farmers, U. S.	100 pounds	5.26	4.94	5.22	5.44	4.26	4.38	4.64
Peanut meal, 45 pct. protein, S.E. milling points	Ton	86.25	75.30	88.65	89.50	60.05	65.10	67.40
White hominy feed, Chicago	"	58.50	50.90	83.60	96.40	55.15	54.25	50.95
Gluten feed, 23 pct. protein, Chicago	"	56.00	56.70	79.75	85.20	53.25	56.05	58.25
Tankage digester, 60 pct. protein, Chicago	"	122.90	112.10	133.25	138.00	104.10	112.45	125.20
Meat scraps, Chicago	"	117.90	98.45	124.75	124.80	99.10	104.65	110.30
Fish meal, San Francisco	"	180.60	173.55	172.50	183.60	128.55	146.65	164.15
Alfalfa meal, No. 1 fine, Kansas City	"	46.80	46.10	48.30	48.50	39.50	40.20	40.00
Mixed dairy feed, 16 pct. protein, price paid by farmers, U. S.	100 pounds	3.79	3.71	4.43	4.57	3.72	3.71	3.79
Laying mash, price paid by farmers, U. S.	"	4.61	4.48	5.40	5.53	4.59	4.55	4.62
Scratch feed, price paid by farmers, U. S.	"	4.15	3.95	5.31	5.55	4.32	4.15	4.13

INDEX NUMBERS OF PRICES

		Percent	Percent	Percent	Percent	Percent	Percent	Percent
Feed grains, price received by farmers, U.S.	1910-14=100	198	194	324	350	204	189	191
Ten principal high-protein feeds, terminal markets	1935-39=100	298	267	308	327	221	252	258
Four oilseed meals	"	304	268	300	321	215	250	248
Tankage, meat scraps, and fish meal	"	312	286	317	330	244	268	296
Gluten feed, brewers' dried grains, and distillers' dried grains	"	242	233	334	352	223	239	254
Feed, prices paid by farmers, U. S.	1910-14=100	227	220	286	299	221	218	223

LIVESTOCK-FEED PRICE RATIOS 1/

	(Dec. average)								
Hog-corn, Chicago	1927-46 = 11.8	Bushel	17.3	17.1	10.3	10.1	17.3	16.4	14.8
Hog-corn, U. S. farm price	1927-46 = 12.3	"	18.0	18.6	11.1	10.6	17.8	18.0	17.2
Beef-steer-corn, Chicago	1927-46 = 15.5	"	17.0	17.3	12.2	11.1	21.8	22.2	18.8
Butterfat-feed, U. S.	1927-46 = 26.8	Pound	28.7	30.5	20.3	21.4	24.1	22.7	23.0
Milk-feed, U. S.	1927-46 = 1.40	"	1.54	1.54	1.16	1.16	1.48	1.48	1.44
Egg-feed, U. S.	1937-46 = 15.9	"	13.1	13.3	11.3	12.0	14.9	16.2	14.6

Prices compiled from Chicago Journal of Commerce, Minneapolis Daily Market Record, Kansas City Grain Market Review, and reports of the Grain Branch, Production and Marketing Administration, and the Bureau of Agricultural Economics.

1/ Units of corn or other concentrate ration equal in value to 100 pounds of hog or beef-steer, one pound of butterfat or milk, or one dozen eggs.

THE FEED SITUATION

Approved by the Outlook and Situation Board, January 4, 1949

SUMMARY

Ample supplies of feed grains and other concentrates for the 1948-49 feeding season, as shown by the December crop estimates, are in sharp contrast with the small supplies of a year ago. The total supply of feed concentrates, including grains and byproduct feeds, is estimated at 168 million tons, about one-fourth larger than the 1947-48 supply, and a little above the large 1942-46 average supply. The supply per animal unit is about 8 percent larger than the previous record of 1946-47.

The 1948 corn crop was estimated in December at 3,651 million bushels, or 53 percent larger than the small 1947 crop. Variations in corn production have been unusually large in the past two years, since the below-average 1947 crop was preceded and followed by record large crops. Much of the variation in corn production was in the Corn Belt, especially in the western half.

With ample supplies, the total quantity of concentrates fed to livestock is expected to be around 10 percent larger than in 1947-48. The rate of feeding per animal probably will be near record and the number of animal units will be larger, principally because of increases in poultry and hog numbers.

In mid-December the average price received by farmers for corn was $1.23 per bushel, or 21 cents below the loan rate. Market prices were around 10 cents a bushel higher in late December than the low point reached early in the season. Some further increases in corn prices appear probable this winter and spring. Compared with a year ago, feed grain prices are generally low in relation to prices of protein feeds. The index of prices received for feed grains in mid-December was 45 percent lower than a year earlier, while the index of wholesale prices of 10 high-protein feeds was 21 percent lower. The relation between feed prices and livestock prices is much more favorable to livestock producers this winter than last, and is expected to continue favorable, at least through the first half of 1949.

Marketings of corn from the bumper 1948 crop have been unusually heavy so far this season. Total sales for the marketing year are expected to at least equal the record sales from the 1946 crop. Receipts of corn at principal markets in November and December totaled 108 million bushels, by far the largest on record for those months. Receipts of oats and barley, on the other hand, from July through December were somewhat smaller than in 1947.

CURRENT SITUATION AND OUTLOOK

Near Record Feed Supply Indicated by Final Crop Report; Hay Supplies Ample

The December 1 Crop Report showed little net change in the over-all feed supply situation from a month earlier. The final 1948 estimate of the corn crop was 3,651 million bushels, 53 percent larger than the small 1947 crop. Estimates of production of oats, barley, and sorghum grains were each substantially larger than last year. The total 1948-49 supply of the 4 feed grains, including the small carry-over from last year, is 145 million tons, the largest of record.

Total supplies of feed concentrates, including the record supply of feed grains, a prospective smaller quantity of wheat and rye for feed, and another large supply of byproduct feeds, is estimated at 168 million tons. This is one-fourth larger than the small supply last year and 3 percent above the large 1942-46 average.

With only a slight increase expected in the number of grain-consuming animal units to be fed during the feeding year, the supply per animal unit of 1.07 tons is about 8 percent larger than the previous record supply per animal in 1946-47. Grain-consuming animal units have declined sharply since 1944 and the supply of feed concentrates per animal unit is about 17 percent larger than the 1942-46 average.

With a record supply of feed grains this year and with prices of feed grains much lower than those of wheat, the quantity of wheat fed probably will be much smaller than in 1947-48 and the smallest since before the war. Wheat purchased for feed probably will be confined largely to damaged wheat or that unfit for human consumption. The quantity of wheat fed on farms of producers probably will be somewhat less than in 1947-48.

Total byproduct feed supplies will again be large for 1948-49 -- probably somewhere around the high level of the past 2 years. The record production of oilseed cake and meal in prospect for 1948-49 will provide ample supplies for domestic livestock and permit the largest export of these feeds in recent years. In October-November production of oilseed cake and meal was 10 percent larger than in those 2 months of 1947. Production of wheat millfeeds is expected to be a little smaller in the 1948-49 feeding season than in 1947-48, but will be much larger than the prewar average. Gluten feed and meal production is expected to be around one-sixth larger than in 1947-48.

Hay supplies will be ample for livestock on farms for the current feeding season. The total hay supply for 1948-49 is about 3 percent smaller than in 1947-48 and the smallest in recent years, but it is larger than in any year before the war. The 1948 hay crop was estimated at about 100 million tons, which together with the carry-over of 15 million tons, gives a supply of 115 million tons. Hay-consuming livestock on farms this year are expected to be slightly smaller than a

Table 2.- Feed balance, numbers of animal units, and feed per unit, United States, year beginning October, average 1937-41, annual 1944-48

Item	Average 1937-41	1944	1945	1946	1947 1/	1948 2/
	Million tons	Million tons	Million tons	Million tons	Million tons	Million tons
Supply						
Stocks beginning of crop year 3/	16.9	11.6	14.9	10.9	13.7	7.7
Production						
Corn	72.1	86.5	80.7	91.0	66.8	102.2
Oats	18.1	18.4	24.6	24.0	19.2	23.9
Barley	6.9	6.6	6.4	6.3	6.7	7.6
Sorghum grains	2.2	5.2	2.7	3.0	2.7	3.7
Total feed grains produced	99.3	116.7	114.4	124.3	95.4	137.4
Other grains fed 4/	4.8	10.7	8.3	4.7	6.1	3.5
Byproduct feeds for feed	15.4	19.0	17.7	19.5	19.1	19.0
Total supply of concentrates	136.4	158.0	155.3	159.4	134.3	167.6
Utilization						
Domestic feed grains fed	85.4	99.4	107.5	100.3	87.3	102.0
Domestic wheat and rye fed	4.6	8.3	8.1	4.6	6.0	3.5
Other grain fed	0.2	2.4	0.2	0.1	0.1	---
Oilseed cake and meal	3.9	6.2	5.8	5.8	6.3	6.4
Animal protein feeds	2.9	2.6	2.4	2.4	2.4	2.4
Other byproduct feeds	8.6	10.2	9.5	11.3	10.4	10.2
Total concentrates fed	105.6	129.1	133.5	124.5	112.5	124.5
Feed grains for seed, human food, industry, and export	11.8	15.0	13.2	19.3	13.6	19.1
Total utilization	117.4	144.1	146.7	143.8	126.1	143.6
Total utilization adjusted to crop year basis	116.5	143.1	144.4	145.7	126.6	143.6
Stocks at end of crop year 3/	19.9	14.9	10.9	13.7	7.7	24.0
Number of grain-consuming animal units fed annually Oct.-Sept. (million) 5/	153.1	173.7	167.7	161.3	154.6	157.0
Supply of all concentrates per animal unit (ton)	.89	.91	.93	.99	.87	1.07
Concentrates fed per animal unit (ton)	.69	.74	.80	.77	.73	.79

1/ Preliminary.

2/ Based on indications in December 1948. Tentative estimates of utilization and carry-over at the end of the year. Subject to change as additional data become available.

3/ Stocks in all positions of corn October 1 and oats and barley July 1.

4/ Imported grain and domestic wheat and rye fed.

5/ For weights, see table 2, August-September 1948 Feed Situation.

year earlier and the smallest in at least 10 years. The supply of hay per hay-consuming animal unit is estimated to be about the same as the record supply per animal last year. However, distribution of the supply is poorer than a year ago and more hay than usual will have to be shipped in to some areas of the Midwest, where production was considerably below average.

Marketing of Corn Very Heavy; Oats and Barley Marketings Smaller Than Last Year

Marketings of corn by farmers have been unusually large so far this season, as reflected by the very large receipts at primary markets from the middle of October through December. November and December receipts totaled 108 million bushels, a much larger quantity than for the two months in any previous year. During the remainder of 1948-49, marketings of corn are expected to continue large. Total sales by farmers probably will be at least as large as the record sales of 828 million bushels from the 1946 crop. Farm sales from the small 1947 crop totaled only 517 million bushels.

Table 3.- Feed grains: Receipts at primary markets, December, average 1942-46 and 1947, and September-December 1948

Item	December		1948			
	Average 1942-46	1947	Sept.	Oct.	Nov.	Dec.
	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels
Corn, 12 markets 1/	34,572	20,146	17,246	26,498	62,961	45,276
Oats, 12 markets 1/	10,238	8,267	14,506	9,706	8,841	9,335
Barley, 4 markets 2/	9,266	10,020	13,926	12,569	10,617	11,300

Compiled from reports of the Grain Branch, Production and Marketing Administration.

1/ Chicago, Milwaukee, Minneapolis, Duluth, St. Louis, Kansas City, Peoria, Omaha, Indianapolis, Sioux City, St. Joseph, and Wichita.

2/ Minneapolis, Milwaukee, Chicago, and Duluth.

On the other hand, market receipts of oats and barley since the beginning of their marketing year in July have been somewhat smaller than a year earlier. Receipts of oats at the 12 primary markets for July through December totaled about 85 million bushels, or about 18 percent smaller than in those 6 months of last year. Receipts of barley at the 4 principal barley markets totaled about 79 million bushels, or about 18 percent smaller than a year earlier. Ordinarily about two-thirds of the annual sales of oats and barley are made in the first half of the marketing year. The smaller receipts of oats in the first half of the year indicate that oats sales from the 1948 crop may be somewhat smaller than the 342 million bushels sold in 1947-48. Last year barley sales were relatively heavy in the first half of the marketing year. With a more nearly normal pattern of barley sales this year, the total quantity sold may be about as large as that sold from the 1947 crop.

Corn Prices Low in Relation to Many Other Feeds

The record corn crop this year resulted in a sharp drop in corn prices from July to late October. Since early in November, market prices of corn have advanced about 10 cents per bushel, but they are still below the 1948 loan rate and also are low in relation to many other feeds (see table 4). Corn prices are expected to strengthen further this winter and spring. Ordinarily a big corn crop is accompanied by a little more than the usual seasonal increase in prices during the marketing year. The loan program for corn is a price strengthening factor.

With a record large supply of feed grains per animal unit, feed grain prices are expected to continue relatively low, at least through the first half of 1949. Compared with a year earlier, feed grain prices have declined much more than protein feed. The index of prices received by farmers for feed grains in mid-December was 45 percent lower than in December 1947, while the index of wholesale prices of 10 high-protein feeds was 21 percent lower.

Table 4.- Price of specified feeds compared with corn, December, average 1924-43, 1947 and 1948

Feed and market	December						Equivalent prices in Dec. 1948 1/
	Average 1924-43		1947		1948		
	Price per 100 pounds	Percentage of corn price	Price per 100 pounds	Percentage of corn price	Price per 100 pounds	Percentage of corn price	
	Dol.	Percent	Dol.	Percent	Dol.	Percent	Dol.
Corn, No. 3 Yellow, Chicago	1.31	100	4.66	100	2.54	100	2.54
Oats, No. 3 White, Chicago	1.35	103	3.98	85	2.71	107	2.43
Barley, No. 3, Minneapolis	1.42	108	5.23	112	2.80	110	2.62
Milo maize, No. 2, Yellow, Kansas City	1.26	96	4.18	90	2.44	96	2.62
Wheat, No. 2 H.W., Kansas City	1.82	139	5.02	108	3.81	150	2.86
Bran, standard, Chicago	1.30	99	3.63	78	2.59	102	2.62
Middlings, standard, Chicago	1.31	100	3.87	83	2.62	103	2.95
Gluten feed, 23 percent, Chicago	1.46	111	4.26	91	2.91	115	3.36
Hominy feed, white, Chicago	1.51	115	4.82	103	2.55	100	2.70
Soybean meal, 41 percent, Chicago	---	---	5.08	109	3.90	154	4.36
Cottonseed meal, 41 percent, Chicago	1.81	138	5.28	113	4.01	158	4.01
Linseed meal, 32 percent, Minneapolis	2.02	154	4.74	102	4.15	163	3.84
Brewers' dried grains, Chicago	---	---	3.91	84	3.36	132	2.92
Meat scraps, Chicago	---	---	6.24	134	5.52	217	4.58
Tankage, dig., 60 percent, Chicago	2.82	215	6.90	148	6.26	246	5.33

1/ Prices that could be paid for each of the feeds to be approximately equivalent in feeding value to corn at $1.42 per bushel ($2.54 per 100 pounds) and cottonseed meal at $80.25 per ton ($4.01 per 100 pounds) based on the prices of and the percentage of carbohydrates and protein in both corn and cottonseed meal and in each of the other feeds. For method of computation see "Feeds and Feeding" by F. B. Morrison, 20th Edition, page 194.

In December, the market price of corn per 100 pounds was higher than milo maize and about the same as wheat millfeeds and hominy feed, but was lower than most other feeds. Corn is cheaper than most of the other feeds, using as a basis for comparison the relationship of present prices to the 20-year (1924-43) average. This is in contrast with the situation a year ago, when corn prices were comparatively high as a result of the small 1947 crop. The price of wheat in December was 86 cents per bushel higher than corn, and as a feed was much higher, even after allowing for differences in weight and in feeding value.

Prices of the various kinds of feeds are compared with the prices of corn and cottonseed meal in table 4, taking into consideration the differences in digestible nutrients and protein content. The comparisons, however, do not make allowances for other factors which make them more or less desirable as feeds. Feeds high in protein are compared principally with cottonseed meal, those low in protein principally with corn. On this basis, corn, milo maize, wheat millfeeds, gluten feed, and soybean meal were relatively cheap in December.

Large Volume of Corn Expected To Be Placed Under Loan

A large quantity of corn from the 1948 crop will be placed under Government loan - the total will be larger than in any year since the record quantity under loan in 1939-40, and it may exceed the 302 million bushels of that year. During recent years, comparatively little corn has been placed under loan, as corn prices have been generally higher than the loan rates. Farmers are taking an active interest in the loan program this year, and through November 27.1 million bushels were placed under loan and 4.4 million bushels under the Government purchase agreement program. About half of this corn was in Iowa and one-fourth in Nebraska. Most of the remainder was in Minnesota, South Dakota, and Illinois. These 5 States ordinarily account for more than 90 percent of the total quantity sealed in the country.

The average price received by farmers in the United States for corn in mid-December was $1.23 cents per bushel, or 21 cents below the national average loan rate. Prices were 15 to 25 cents per bushel below the loan rate in the major Corn Belt States. The price of corn in mid-December this year was somewhat lower (in cents per bushel) compared with the loan rates than in previous years, when considerable quantities of corn were placed under loan (See table 5). Loans were made on 230 million bushels of corn in 1938 and 302 million bushels in 1939. In 1940 and 1941 a little over 100 million bushels were placed under loan each year.

Through November, loans had been made on 13.3 million bushels of oats, 25.4 million bushels of barley, and 10.7 million bushels of grain sorghums from the 1948 crops. In addition, purchase agreements were approved for 1.9 million bushels of oats and 3.9 million bushels of barley. The price of oats has been a little above the loan rate since October, and barley prices stayed close to the loan level in November and December.

Table 5.- Corn: Loan rate and average price received per bushel by farmers, December 15, specified States, 1948 with comparisons 1/

State	1938		1939		1940		1941		1948	
	Loan rate	Farm price Dec. 15	Loan rate	Farm price Dec. 15	Loan rate	Farm price Dec. 15	Loan rate 2/	Farm price Dec. 15	Loan rate	Farm price Dec. 15
	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.
Illinois	.57	.42	.57	.47	.61	.52	.74-.79	.66	1.40 - 1.47	1.23
Iowa	.57	.38	.57	.44	.61	.47	.70-.76	.64	1.35 - 1.41	1.19
Minnesota	.57	.36	.57	.40	.61	.45	.69-.75	.58	1.35 - 1.39	1.16
Nebraska	.57	.39	.57	.51	.61	.53	.72-.74	.59	1.34 - 1.41	1.22
South Dakota	.57	.36	.57	.43	.61	.46	.69-.74	.57	1.34 - 1.40	1.12
United States	.57	.431	.57	.503	.61	.545	.75	.669	1.44	1.23

Loan rates compiled from records of the Grain Branch, Production and Marketing Administration.

1/ Years selected for comparison are those in the period 1938-47, when more than 100 million bushels of corn were placed under loan. 2/ Range in commercial counties only.

Table 6.- Corn: Quantities placed under Government loan in specified States and the United States, 1938-47.

State	Crop of									
	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947
	Million bushels	Million bushels	Million bushels	Million bushels	Million bushels	Million bushels	Million bushels	Million bushels	Million bushels	Million bushels
Illinois	60.5	84.9	13.6	28.2	9.4	.9	.4	1/	2.0	1/
Iowa	112.1	144.5	59.3	47.7	50.8	4.9	5.4	1.3	14.1	.5
Minnesota	16.3	37.6	8.0	8.2	1.2	.4	.7	1/	.3	.1
Nebraska	18.8	11.8	13.2	17.7	10.1	1.2	9.5	1.3	7.2	.4
South Dakota	4.4	8.6	4.1	3.5	1.8	.2	3.4	.2	.5	1/
Total 5 States	212.1	287.4	98.2	105.3	53.3	7.6	19.4	2.8	24.1	1.0
Other States	17.7	14.3	4.9	5.6	3.1	.3	1.2	.2	1.9	.1
United States total	229.8	301.7	103.1	110.9	56.4	7.9	20.6	3.0	26.0	1.1

Compiled from records of the Grain Branch, Production and Marketing Administration.

1/ Less than 50,000 bushels.

Increased Feeding of Livestock in Prospect for 1948-49

With the much larger supply of feed grains this year and with favorable livestock-feed price ratios, the total quantity of feed consumed by livestock is expected to be around 10 percent larger than in 1947-48. The rate of feeding per animal probably will be about the highest on record. Dairy cows and beef cattle will be fed more grain and other concentrates than in 1947-48. Also a small increase is expected in the number of animal units to be fed during the year, principally as a result of increased numbers of hogs and poultry.

Recent developments in the cattle situation point to an increase in the number of beef cattle to be grain-fed this winter and spring as compared with a year ago. During November the shipment of stocker and feeder cattle into the 11 Corn Belt States was 39 percent larger than in November last year. The total movement into these States for the period July through November was 10 percent larger than last year, and except for 1946 was the largest since 1940.

The 1948 fall pig crop was estimated in the December pig report to be about 8 percent larger than in 1947. All the feed for these pigs will come from 1948-49 feed supplies. With much more corn available this year and with the hog prices high in relation to corn, hogs probably will be fed to a little heavier weights than in 1947-48, which would mean more corn fed per hog. Hog producers also indicated their intentions to increase the number of sows to farrow in the spring of 1948 by about 14 percent over the number farrowing in 1947.

The quantity of grain and other concentrates fed to milk cows has increased much more than seasonally this fall. On December 1 the quantity fed to milk cows in the herds of dairy reporters was about 12 percent larger than on that date in 1947 and 18 percent above the 1937-46 average. Dairy cows probably will continue to receive above average quantities of feed concentrates throughout the 1948-49 feeding season. Although there are no figures on the rate of feeding poultry, the ample supply of feed available and the favorable relationship between feed prices and prices of eggs and chickens is expected to encourage poultry producers to feed liberally during the 1948-49 season, and to increase poultry numbers in 1949. Egg production, both total and per hen, was the largest on record in November. A prospective increase in broiler production early in 1949 is indicated by the much larger number of chicks hatched in commercial hatcheries this fall than last.

REGIONAL VARIATIONS IN CORN PRODUCTION

In the past 2 years there have been great variations in corn production in this country, as the small 1947 crop was preceded and followed by the record crops of 1946 and 1948. Corn production dropped 866 million bushels from 1946 to 1947 and increased 1,267 million bushels from 1947 to 1948, the largest bushel increase on record from one year to the next. Periods of marked variation in corn production such as 1946-48, however, are not uncommon and have occurred a number of times in the past 83 years, for which official estimates have been made of corn production. In the period including the drought years of the thirties, changes in production measured as percentage changes from the preceding year were greater than those of the past 2 years.

Year-to-year changes in United States corn production during the past 30 years (1919-48) averaged 408 million bushels, or about 15 percent of the average production for the period (2,635 million bushels). This fairly wide variation in corn production is of particular interest, since corn is the basic feed for livestock in this country. In recent years, corn production alone has made up about 50 to 60 percent of the total feed concentrate supply, and has been responsible for a considerable part of the variation in feed supplies. Variations in supplies of feed available to livestock influence livestock production and in turn affect supplies and prices of meat, eggs, milk, and other livestock products.

In comparing changes in corn production in the various regions of the United States, it is found that there is greater variation in some areas than in others. Variations in the Corn Belt, especially in the western half, have been much greater than in other regions of the country. For the purpose of comparing the variation in corn production by regions, the main crop producing area of the country is divided into the East North Central and West North Central regions. 1/ Production in all other regions is totaled to make up the third area. The East North Central region ordinarily produces about one-third of the total United States production, the West North Central region a little over 40 percent, and all other regions of the country about one-fourth. Comparisons are made for the period 1919-48, which is considered long enough to indicate the relative year to year changes in production in the areas, and avoids the upward trend in production resulting from increasing acreage prior to 1919.

The annual production of corn for these 3 areas and the change in production from the preceding year as a percentage of average production are shown in table 7. The annual percentage change is computed by dividing the change in production from the preceding year, in million bushels, by the average 1919-48 production for each area. The average percentage change for the entire period is derived by dividing the average change in million bushels, disregarding the direction of the change, by the average production.

1/ The two regions include the following States: East North Central -- Ohio, Indiana, Illinois, Michigan, and Wisconsin. West North Central -- Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas.

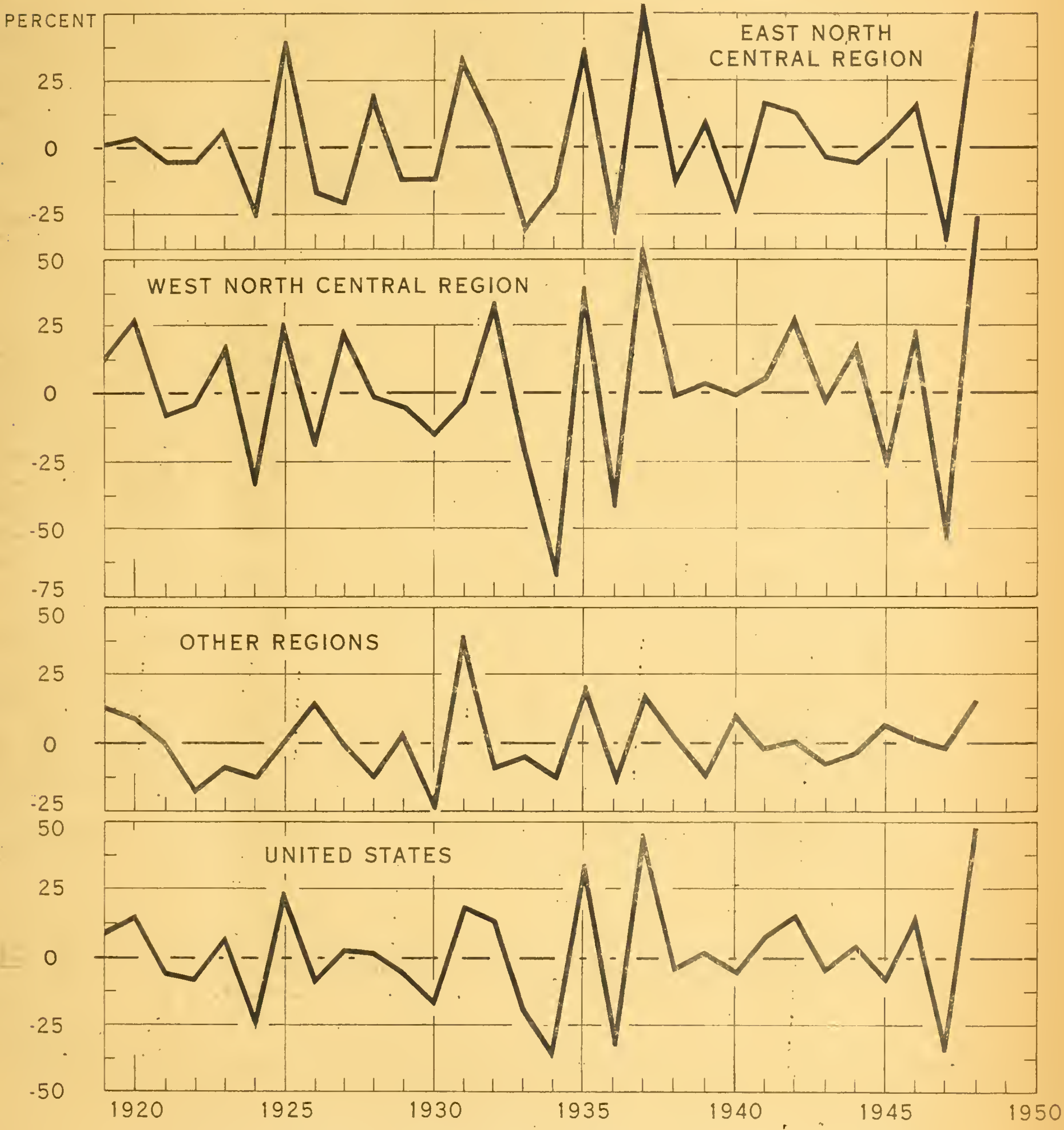
Table 7.- Corn production: Total and change from the preceding year as a percentage of average production, specified regions and the United States, 1919-48

Year	Production 1/				Change from preceding year as a percentage of 1919-48 average production			
	East North Central region	West North Central region	Other regions	United States	East North Central region	West North Central region	Other regions	United States
	Mil. bu.	Mil. bu.	Mil. bu.	Mil. bu.	Percent	Percent	Percent	Percent
1919	801	1,035	843	2,679	1.0	12.4	12.8	9.0
1920	831	1,335	905	3,071	3.7	26.7	8.8	14.9
1921	790	1,234	904	2,928	- 5.1	- 9.0	- .1	- 5.4
1922	746	1,182	779	2,707	- 5.4	- 4.6	-17.8	- 8.4
1923	797	1,364	714	2,875	6.3	16.2	- 9.3	6.4
1924	601	998	624	2,223	-24.3	-32.5	-12.8	-24.7
1925	907	1,265	626	2,798	37.9	23.7	.3	21.8
1926	770	1,050	727	2,547	-17.0	-19.1	14.4	- 9.5
1927	605	1,287	724	2,616	-20.4	21.1	- .4	2.6
1928	758	1,272	636	2,666	18.9	- 1.3	-12.5	1.9
1929	654	1,207	655	2,516	-12.9	- 5.8	2.7	- 5.7
1930	555	1,033	492	2,080	-12.2	-15.5	-23.2	-16.5
1931	818	997	761	2,576	32.5	- 3.2	38.3	18.8
1932	870	1,366	694	2,930	6.4	32.8	- 9.5	13.4
1933	622	1,120	656	2,398	-30.7	-21.9	- 5.4	-20.2
1934	498	385	568	1,449	-15.3	-65.5	-12.5	-36.0
1935	782	814	703	2,299	35.1	38.3	19.2	32.3
1936	536	363	607	1,506	-30.4	-40.1	-13.7	-30.1
1937	954	962	727	2,643	51.7	53.3	17.1	43.1
1938	847	960	742	2,549	-13.2	- .2	2.1	- 3.6
1939	922	1,001	658	2,581	9.3	3.6	-12.0	1.2
1940	740	991	726	2,457	-22.5	- .9	9.7	- 4.7
1941	883	1,052	717	2,652	17.7	5.4	- 1.3	7.4
1942	989	1,361	719	3,069	13.1	27.5	.3	15.8
1943	965	1,335	666	2,966	- 3.0	- 2.3	- 7.5	- 3.9
1944	921	1,528	639	3,088	- 5.4	17.2	- 3.8	4.6
1945	953	1,244	684	2,881	4.0	-25.3	6.4	- 7.9
1946	1,080	1,479	691	3,250	15.7	20.9	1.0	14.0
1947	818	890	676	2,384	-32.4	-52.4	- 2.1	-32.9
1948	1,226	1,635	790	3,651	50.5	66.2	16.2	48.1
Average	808	1,125	702	2,635				
Average change 2/	149	249	69	408	±18.4	±22.1	±9.8	±15.5

1/ Production for all purposes.

2/ Arithmetic average, disregarding direction of change. Average percentage change computed by dividing the average change by the average production.

CORN: CHANGE IN PRODUCTION FROM THE PRECEDING YEAR AS A PERCENTAGE OF AVERAGE PRODUCTION, SELECTED REGIONS, AND THE UNITED STATES, 1919-48*



* *CHANGE IN BUSHELS AS A PERCENTAGE OF AVERAGE PRODUCTION FOR 1919-48*

U. S. DEPARTMENT OF AGRICULTURE

NEG. 47013 BUREAU OF AGRICULTURAL ECONOMICS

While the average change in production from one year to the next for the United States was about 15 percent of the 1919-48 average production, the average change in the West North Central region was 22 percent, nearly 50 percent greater than for the United States and more than double the average variation of 9.8 percent for all regions outside of the Corn Belt. Variation in the East North Central region averaged a little less than in the West North Central, but it also was greater than the average for the United States.

The "other" regions include the North Atlantic, South Atlantic, South Central, and Western. Variations in the main Corn Belt were much greater than the variation in any of these regions considered separately, except the Western, where average variation was about the same as for the West North Central region. A large part of the variation in the Western region is the result of the variation in Colorado, where nearly one-half of the corn is produced. Corn is a minor crop in the Western region and production averaged only 32 million bushels for the 30-year period.

The greater variation in the West North Central region than in other areas is due largely to the fact that corn production is reduced much more in this area than in other areas when the nation has small corn crops, such as those of 1934, 1936, and 1947. Except in periods such as 1934-37, 1947, and 1948, the year to year variations are as great in the Eastern Corn Belt as in the Western. Historically the Western Corn Belt, especially the area west of the Missouri River, has been much more subject to hot, dry seasons such as those mentioned above, which have sharply reduced corn production in numerous periods in the past. This has been in evidence not only in the past 30 years, but also in the years prior to the first World War, as is illustrated in table 8.

Table 8.- Corn: Change in production from the preceding year for specified areas in selected years 1/

Year	East North Central region	West North Central region	Other regions	United States	Changes in West North Central region as a percentage of change for the United States
	Million bushels	Million bushels	Million bushels	Million bushels	Percent
1890	- 116	- 464	- 64	- 644	72
1901	- 334	- 476	- 136	- 946	50
1913	- 155	- 435	- 85	- 675	64
1934	- 124	- 737	- 88	- 949	78
1936	- 246	- 451	- 96	- 793	57
1947	- 262	- 589	- 15	- 866	68

1/ Years in which the decline in United States corn production was greater than 25 percent of the average production for the periods 1889-1918 and 1919-48.

In the past 30 years there are two periods when variations were especially pronounced. The first of these was 1934-37, which includes the drought years 1934 and 1936. The second was 1947-48, when the small 1947 crop was preceded and followed by record large crops. A large part of the wide differences in variation between regions for the past 30 years disappears when these periods are omitted. The variation in production in the Western Corn Belt, measured in terms of average change as a percentage of average production, is about the same as in the Eastern Corn Belt for the other 24 years of the period, and is nearer the average variation for the other regions of the country (table 9). The variation in all regions and for the United States was reduced somewhat by eliminating those 6 years, but the reduction for the regions outside the Corn Belt was small.

Table 9.- Corn: Average production and variation in production for specified areas and periods

Item	Unit	East North Central region	West North Central region	Other regions	United States
Period 1919-48					
Average production	Mil.bu.	808	1,125	702	2,635
Average change 1/	Mil.bu.	149	249	69	408
Percentage change 2/ ...	Percent	± 18.4	± 22.1	± 9.8	± 15.5
Period 1919-48 (excluding 1934-37, 1947, and 1948)					
Average production	Mil.bu.	809	1,196	708	2,713
Average change 1/	Mil.bu.	114	164	62	266
Percentage change 2/ ...	Percent	± 14.1	± 13.7	± 8.8	± 9.8

1/ Average change in production from the preceding year, disregarding the direction of the change.

2/ Average change divided by the average production.

Most of the year-to-year variation in United States corn production during 1919-48 resulted from changes in yield per acre. The average fluctuation in yield per acre, ignoring direction, was very close to the average variation in production. Changes in yield per acre from one year to the next were greater than 20 percent of the average yield in about one-fourth of the years (table 11). The degree of variation in yield, measured in terms of average change as a percentage of average yield, also was about the same as variation in production for each of the three areas.

In contrast with the rather large changes in corn yield from year to year, changes in acreage have been comparatively small. The average change in acreage for the United States during 1919-48 was only 2.9 percent of the average acreage. The change from one year to the next exceeded 5 percent in only 4 of the 30 years (table 12). The average percentage change in acreage was about as large for the East North Central region as for the West, but in the East North Central region changes were more uniform, never exceeding 9 percent. In the West North Central region, acreage changed 21 percent from 1933 to 1934, and exceeded 9 percent in 2 other years. The percentage change in other regions of the country averaged a little smaller than in the Corn Belt. While the year to year changes in acreage are small, there has been a pronounced downward trend in acreage since the early 30's, especially outside the Corn Belt.

Variation in yield per acre and in acreage for the entire period and for the 24 years, excluding 1934-37 and 1947-48, are compared for the three areas and for the United States as a whole in table 10. When the 2 periods 1934-37 and 1947-48 are omitted, the effect on variation in yield is quite similar to the effect on variation in production shown in table 9. Omitting these periods resulted in a reduction of nearly 40 percent in variation of yield for the West North Central region and much smaller reductions in other areas. The omission of the periods 1934-37 and 1947-48 had much less influence on the average variations in acreage.

Table 10.- Corn: Average percentage change in acreage and yield, specified areas and periods 1/

Period 1919-48	Acreage 2/				Yield per acre 2/			
	East North Central region	West North Central region	Other regions	United States	East North Central region	West North Central region	Other regions	United States
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
All years..	±4.3	±4.8	±3.5	±2.9	±16.7	±21.8	±10.1	±14.7
Excluding 1934, 1935, 1936, 1937, 1947, and 1948	±4.3	±4.1	±3.7	±2.7	±12.8	±13.5	±9.6	±9.0

1/ Average change in acreage divided by the average acreage and average change in yield divided by the average yield.

2/ Acreage harvested and yield per harvested acre, 1919-28, acreage planted and yield per planted acre, 1929-48.

It is of some interest to consider the closeness with which year to year changes in corn production in the different areas are associated. While there appears to be a fair degree of association between changes in production in the West North Central and East North Central regions, there is very little association between changes in the West North Central region and changes in the other areas of the country.

Table 11.- Corn yield: Actual and change from the preceding year as a percentage of average yield, specified regions and the United States, 1919-48 1/

Year	Yield per acre				Change from preceding year as a percentage of 1919-48 average yield			
	East North Central region	West North Central region	Other regions	United States	East North Central region	West North Central region	Other regions	United States
	Bushels	Bushels	Bushels	Bushels	Percent	Percent	Percent	Percent
1919	37.0	29.7	20.2	27.3	4.1	19.0	13.8	12.5
1920	37.2	34.9	22.2	30.3	.5	18.0	10.6	11.0
1921	36.6	33.2	20.4	28.4	- 1.5	- 5.9	- 9.5	- 7.0
1922	35.3	30.8	18.9	27.0	- 2.1	- 8.3	- 7.9	- 5.1
1923	37.1	33.0	18.7	28.4	2.3	7.6	- 1.1	5.1
1924	28.9	23.4	16.9	22.1	-21.1	-33.2	- 9.5	-23.1
1925	41.8	28.8	17.5	27.6	33.2	18.7	3.2	20.2
1926	36.4	24.4	20.6	25.6	-13.9	-15.2	16.4	- 7.4
1927	31.2	30.4	20.3	26.6	-13.4	20.8	- 1.6	3.7
1928	36.5	29.0	17.8	26.6	13.6	- 4.8	-13.2	0
1929	33.4	27.7	18.2	25.4	- 8.0	- 4.5	2.1	- 4.4
1930	26.8	22.7	13.0	20.0	-17.0	-17.3	-27.5	-19.9
1931	37.1	21.2	18.9	23.6	26.5	- 5.2	31.2	13.2
1932	39.4	28.1	16.4	25.9	5.9	23.9	-13.2	8.5
1933	29.5	23.7	15.8	21.8	-25.4	-15.2	- 3.2	-15.1
1934	25.3	9.8	13.5	14.4	-10.8	-48.1	-12.2	-27.2
1935	38.4	21.3	17.0	23.0	33.7	39.8	18.5	31.6
1936	25.0	8.9	15.3	14.8	-34.4	-42.9	- 9.0	-30.1
1937	43.4	26.0	19.0	27.2	47.3	59.2	19.6	45.6
1938	41.7	28.0	18.6	27.0	- 4.4	6.9	- 2.1	- .7
1939	47.8	30.5	16.6	28.2	15.7	8.7	-10.6	4.4
1940	39.6	31.5	18.9	27.7	-21.1	3.5	12.2	- 1.8
1941	47.4	33.8	19.4	30.5	20.1	8.0	2.6	10.3
1942	51.5	40.4	20.0	34.5	10.5	22.8	3.2	14.7
1943	47.5	34.9	18.6	31.4	-10.3	-19.0	- 7.4	-11.4
1944	41.8	38.4	19.0	32.3	-14.7	12.1	2.1	3.3
1945	46.2	32.6	22.1	32.1	11.3	-20.1	16.4	- .7
1946	50.0	39.2	22.7	36.2	9.8	22.8	3.2	15.1
1947	39.5	24.7	23.1	27.7	-27.0	-50.2	2.1	-31.2
1948	56.4	46.6	26.9	42.4	43.4	75.8	20.1	54.0
Average	38.9	28.9	18.9	27.2				
Average change 2/	6.5	6.3	1.9	4.0	±16.7	±21.8	±10.1	±14.7

1/ Yield per harvested acre 1919-28, and per planted acre 1929-48.

2/ Arithmetic average, disregarding direction of change. Average percentage change computed by dividing the average change by the average yield.

Table 12.- Corn acreage: Total and change from the preceding year as a percentage of average acreage, specified regions and the United States, 1919-48 1/

Year	Acreage				Change from preceding year as a percentage of 1919-48 average acreage			
	East North Central region	West North Central region	Other regions	United States	East North Central region	West North Central region	Other regions	United States
	Million acres	Million acres	Million acres	Million acres	Percent	Percent	Percent	Percent
1919	21.6	34.9	41.6	98.1	- 3.8	- 5.1	- 3.5	- 4.2
1920	22.3	38.3	40.8	101.4	3.4	8.6	- 2.1	3.4
1921	21.6	37.2	44.4	103.2	- 3.4	- 2.8	9.6	1.8
1922	20.8	38.3	41.2	100.3	- 3.8	2.8	- 8.5	- 3.0
1923	21.4	41.4	38.3	101.1	2.9	7.9	- 7.7	.8
1924	20.8	42.7	36.9	100.4	- 2.9	3.3	- 3.7	- .7
1925	21.7	43.9	35.7	101.3	4.3	3.0	- 3.2	.9
1926	21.2	43.0	35.3	99.5	- 2.4	- 2.3	- 1.1	- 1.8
1927	19.4	43.4	35.6	98.4	- 8.7	1.0	.8	- 1.1
1928	20.8	43.8	35.7	100.3	6.7	1.0	.3	1.9
1929	19.6	43.6	35.9	99.1	- 5.8	- .5	.5	- 1.2
1930	20.7	45.5	37.7	103.9	5.3	4.8	4.8	4.9
1931	22.1	47.1	40.2	109.4	6.7	4.1	6.7	5.6
1932	22.1	48.6	42.3	113.0	0	3.8	5.6	3.7
1933	21.1	47.3	41.4	109.8	- 4.8	- 3.3	- 2.4	- 3.3
1934	19.7	38.9	42.0	100.6	- 6.7	-21.3	1.6	- 9.4
1935	20.4	38.2	41.4	100.0	3.4	- 1.8	- 1.6	- .6
1936	21.4	40.9	39.7	102.0	4.8	6.8	- 4.5	2.0
1937	22.0	37.0	38.2	97.2	2.9	- 9.9	- 4.0	- 4.9
1938	20.3	34.3	39.9	94.5	- 8.2	- 6.8	4.5	- 2.8
1939	19.3	32.8	39.5	91.6	- 4.8	- 3.8	- 1.1	- 3.0
1940	18.7	31.5	38.5	88.7	- 2.9	- 3.3	- 2.7	- 3.0
1941	18.6	31.2	37.0	86.8	- .5	- .8	- 4.0	- 1.9
1942	19.2	33.7	35.9	88.8	2.9	6.3	- 2.9	2.0
1943	20.3	38.3	35.7	94.3	5.3	11.7	- .5	5.6
1944	22.0	39.8	33.7	95.5	8.2	3.8	- 5.3	1.2
1945	20.6	38.2	30.9	89.7	- 6.7	- 4.1	- 7.5	- 5.9
1946	21.6	37.7	30.5	89.8	4.8	- 1.3	- 1.1	.1
1947	20.7	36.1	29.3	86.1	- 4.3	- 4.1	- 3.2	- 3.8
1948	21.7	35.1	29.4	86.2	4.8	-2.5	- .3	.1
Average	20.8	39.4	37.5	97.7				
Average change 2/	.9	1.9	1.3	2.8	± 4.3	± 4.8	± 3.5	± 2.9

1/ Harvested acreage 1919-28, and planted acreage 1929-48.

2/ Arithmetic average, disregarding direction of change. Average percentage change computed by dividing the average change by the average acreage.

The coefficient of correlation of percentage changes in production in the West North Central and the East North Central regions during 1919-48 is .75. For the 24 years, omitting 1934-37 and 1947-48, the association is less close and the coefficient is reduced to .46. 1/

Change in corn production in the West North Central region show much less association with changes in other regions of the country. For the entire 30 years the coefficient of correlation of the changes in production in these 2 areas was only .41. When the 2 periods of extreme variation are omitted, the association is too small to be significant. The relative independence of production in other regions from conditions affecting the Corn Belt makes total United States corn production more stable (percentagewise) than in the Corn Belt proper.

The differences in variation in corn production in the various regions of the country are particularly significant in connection with the problem of stabilizing corn supplies through corn storage. The problem of adequate storage of corn to increase the stability of our feed supply also relates to the problem of obtaining more stability in livestock production and prices. Sharp variations in corn production in the Western Corn Belt have been reflected in substantial changes in livestock numbers and production, particularly in that area. This, in turn, has had its effect on total market supplies of livestock and on prices of livestock and livestock products.

Variations in corn production in the Corn Belt also are important in influencing commercial corn supplies, since farm sales from this area are the source of the bulk of our commercial supply. In the past 10 years, corn sales in the West North Central region have amounted to 47 percent of the total sales for the country, and sales in the East North Central region, about 39 percent. The percentage variation in total farm sales of corn has been somewhat greater in the past than the variation in production. More stability in our commercial corn supply is desirable in order to provide a more stable source of supply to domestic processors and to livestock feeders in feed-deficit areas.

Improvement in machinery used in corn production in recent years probably has had some influence in reducing the variation in corn production. The hazard of an unfavorable planting season and losses in harvesting have been reduced, because with modern machinery it is possible to plant and harvest more rapidly. The increased use of corn hybrids, more drought-resistant than open-pollinated corn, also has aided in reducing the variation in corn production. Although these factors have tended to stabilize corn production, they have been offset in part in the past 15 years by a reduction in corn acreage in the more stable producing areas outside of the Corn Belt.

1/ The coefficient of correlation is 1.00 for perfect association and zero for no association.

Table 13.- Feed-grain production, by regions, 1947 and 1948

Geographic division	Corn	Oats	Barley	Sorghum grains	Total
	1947				
	1,000 bu.	1,000 bu.	1,000 bu.	1,000 bu.	1,000 tons
North Atlantic ....:	92,621	38,322	6,770	---	3,369
East North Central.....:	817,551	329,126	11,089	26	28,424
West North Central.....:	890,364	619,085	127,568	12,454	38,246
South Atlantic ....:	229,509	54,373	7,688	175	7,486
South Central ....:	327,712	103,586	7,746	74,525	13,106
Western ....:	26,213	54,930	120,324	8,836	4,748
Total ....:	2,383,970	1,199,422	281,185	96,016	95,379
	1948 1/				
North Atlantic ....:	108,678	64,035	7,300	---	4,243
East North Central.....:	1,225,868	478,457	14,680	32	42,333
West North Central.....:	1,634,519	786,815	143,976	29,329	62,632
South Atlantic ....:	240,392	42,382	7,624	462	7,605
South Central ....:	413,722	69,171	6,784	87,753	15,311
Western ....:	27,369	50,892	136,673	14,068	5,254
Total ....:	3,650,548	1,491,752	317,037	131,644	137,378

1/ Preliminary.

Table 14.- Feed grain supplies, by regions, average 1939-43, annual 1944-48 1/

Geographic division	Average 1939-43 2/	1944	1945	1946	1947	1948 3/
	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons
North Atlantic....:	4,129	3,915	4,147	4,599	3,929	4,574
East North Central:	36,776	33,904	37,653	41,230	32,308	44,219
West North Central:	59,781	62,441	59,438	61,947	45,505	66,245
South Atlantic....:	6,558	6,817	7,463	7,461	8,027	8,207
South Central.....:	14,969	15,270	14,637	14,660	13,912	15,937
Western...........:	4,750	5,733	5,449	5,107	5,213	5,724
United States ....:	126,963	128,080	128,787	135,004	108,894	144,906

1/ Production of corn for all purposes, oats, barley, and grain sorghums, plus total stocks of corn October 1, oats July 1, and barley June 1 (July 1 farm stocks of barley not available by regions).

2/ Does not include interior mill, elevator, and warehouse stocks, data for which are not available prior to 1943. 3/ Preliminary.

Table 15.- Hay supplies, by regions, average 1939-43, annual 1944-48 1/

Geographic division	Average 1939-43	1944	1945	1946	1947	1948 2/
	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons
North Atlantic....:	14,186	15,087	16,415	17,127	16,983	16,291
East North Central:	24,631	24,047	25,900	24,843	24,134	22,001
West North Central:	31,924	35,396	36,276	33,717	33,704	32,731
South Atlantic....:	6,414	6,286	7,252	7,492	6,584	7,246
South Central.....:	12,926	11,697	14,122	14,269	13,463	13,156
Western...........:	22,367	24,065	24,466	23,898	23,371	23,518
Total United States	112,448	116,578	124,431	121,346	118,739	114,943

1/ Production plus farm stocks May 1. 2/ Preliminary.

Table 16.- Feed grains: Planted and harvested acreages, United States, average 1939-43, annual 1944-48

Year	Corn, all purposes		Oats		Barley		Sorghums 1/	
	Planted	Harvested	Planted	Harvested	Planted	Harvested	Planted	Harvested
	1,000 acres	1,000 acres	1,000 acres	1,000 acres	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Average								
1939-43	90,065	87,898	41,169	37,233	16,844	14,480	18,140	16,678
1944	95,475	94,014	43,804	39,672	14,337	12,301	18,271	17,851
1945	89,727	88,079	45,889	41,933	11,718	10,465	15,753	14,592
1946	89,788	88,489	46,549	43,205	11,527	10,411	14,749	13,657
1947	86,108	83,932	42,301	38,451	12,102	11,014	11,746	11,169
1948 2/	86,196	85,439	44,529	40,191	13,295	12,046	13,813	13,075

1/ For grain, forage, and silage. 2/ Preliminary.

Table 17.-Feed grains: Production, United States, average 1939-43, annual 1944-48

Year	Corn		Oats	Barley	Sorghum grain	Total
	All purposes	For grain				
	1,000 bu.	1,000 bu.	1,000 bu.	1,000 bu.	1,000 bu.	1,000 tons
Average						
1939-43	2,744,912	2,486,648	1,173,835	340,880	94,367	106,462
1944	3,088,110	2,801,993	1,149,260	276,112	184,962	116,661
1945	2,880,933	2,593,752	1,535,676	266,833	97,014	114,357
1946	3,249,950	2,951,147	1,497,904	262,258	106,941	124,254
1947	2,383,970	2,137,410	1,199,422	281,185	96,016	95,379
1948 1/	3,650,548	3,364,744	1,491,752	317,037	131,644	137,378

1/ Preliminary.

Table 18.- Hay supply and disappearance, numbers of hay-consuming animal units, and supply and disappearance per animal unit in the United States, average 1939-43, annual 1944-48

Year beginning May	Production	Carry-over from previous year	Supply (production plus carry-over)	Disappearance	Supply per animal unit	Disappearance per animal unit	Animal units fed annually 1/
	1,000 tons	1,000 tons	1,000 tons	1,000 tons	Tons	Tons	Thousands
Average							
1939-43	97,837	14,611	112,448	98,344	1.34	1.17	75,044
1944	102,745	13,833	116,578	100,686	1.31	1.14	78,726
1945	108,539	15,892	124,431	103,824	1.47	1.23	75,342
1946	100,739	20,607	121,346	105,372	1.48	1.29	72,839
1947	102,765	15,974	118,739	103,642	1.54	1.34	70,198
1948 2/	99,846	15,097	114,943		1.69		68,000

1/ Roughage-consuming animal units fed annually. For weights, see table 2, May 1948 Feed Situation.

2/ Preliminary. December estimates.

Table 19.- Production and stocks of specified byproduct feeds, Oct.-Sept., 1946-47 and 1947-48, and Oct.-Nov., 1947 and 1948

Item	1946-47 Oct.-Sept.	1947-48 Oct.-Sept.	1947 Oct.	1947 Nov.	1948 Oct.	1948 Nov.
	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons
Production						
Cottonseed cake and meal..	1,428.3	1/2,014.0	302.8	271.7	318.2	322.6
Soybean cake and meal.....	4,086.4	3,832.8	273.8	352.0	326.3	381.6
Linseed cake and meal.....	374.1	625.0	53.6	56.3	54.5	52.7
Peanut cake and meal.......	115.0	107.3	3.5	6.6	6.0	13.9
Copra cake and meal........	194.2	169.9	15.7	16.7	7.0	9.1
Corn gluten feed and meal.	1,040.1	799.1	82.5	78.5	76.2	81.2
Brewers' dried grains......	228.3	233.1	23.5	18.0	17.3	15.0
Distillers' dried grains...	411.3	351.1	60.8	3.9	32.7	34.6
Wheat millfeeds............	6,099.9	5,479.1	516.5	458.9	471.4	2/460.0
Rice millfeeds.............	166.1	177.2	36.2	29.5	30.1	25.9
Alfalfa meal...............	1,012.4	1,096.8	99.6	69.0	84.7	39.3
Fish cake and meal.........	1/183.3	1/172.5	23.4	10.0	16.0	2/11.5
Dry and powdered skim milk...............	11.3	7.3	.5	.3	.5	.4
Stocks end of period						
Cottonseed cake and meal..	38.4	75.2	62.0	70.2	80.2	78.4
Peanut cake and meal......	.4	.7	.7	1.5	1.7	2.8
Brewers' dried grains.....	2.1	6.7	2.6	2.6	4.1	1.4
Distillers' dried grains..	5.1	3.3	12.1	9.6	3.9	2.3
Alfalfa meal...............	128.1	224.6	119.2	112.0	213.0	127.2

Compiled as follows: Cottonseed cake and meal and wheat millfeeds, Bureau of the Census; soybean, linseed, and copra cakes and meals, Grain Branch, Production and Marketing Administration, derived from Census crushings report; gluten feed and meal, brewers' and distillers' dried grains, rice millfeeds, and alfalfa meal, Production and Marketing Administration; fish cake and meal from Fish and Wildlife Service, Department of the Interior.

1/ Revised.

2/ Preliminary estimate.

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